RESULTS

This study included 45 cases divided into three random groups. Each group was 15 patients:

First group underwent tympanoplasty type I with composite cartilage perichondrium graft.

Second group underwent tympanoplasty type I with fresh auto temporalis fascia graft.

Third group underwent tympanoplasty type I with Alloderm graft.

All patients of this study were reviewed regularly during postoperative period in Benha University Hospital outpatient clinic. All cases of tragal composite cartilage-perichondrium grafts & temporalis fascia grafts myringoplasty had normal wound healing by first intention. All cases had no anaesthetic or major surgical complications.

All patients were successfully discharged on the day of operation and no patient required readmission.

Statistical study for age and sex in each group although has no clinical importance was done to assure insignificant difference between the groups.

The mean age in First group was 26.5 years, in Second group was 26.3 years, and in Third group was 22.9 years. In comparing the 3 groups with each other (Table 3) age was an insignificant measure.

		N	Mean	S D	Min	Max	f	p
age	cartialge-perichondrium graft	15	26.5	8.8	13	45	1.1	>0.05
	fascia graft	15	26.3	8.2	14	43		
	alloderm graft	15	22.9	5.6	15	35		
	Total	45	25.2	7.7	13	45		
preABG	cartialge-perichondrium graft	15	22	4.9	15	30	0.2	>0.05
	fascia graft	15	22.3	5.3	15	30		
	alloderm graft	15	21.3	5.8	15	30		
	Total	45	21.9	5.3	15	30		
postABG	cartialge-perichondrium graft	15	13.3	7.5	5	30	0.6	>0.05
	fascia graft	15	11.3	6.4	5	30		
	alloderm graft	15	11	5.7	5	25		
	Total	45	11.9	6.5	5	30		

Table (3): Comparison among 3 groups according to different variables:

ABG = A – P gap (Air- Bone gap)

According to the gender distribution (Table 4), First group was 5 males and 10 females, Second group was 6 males and 9 females, and Third group was 9 males and 6 females. The percentage of male to female in each group is shown in figure 8. Chi square was 2.4 and P value was >0.05. so the gender distribution was insignificant.

		male		female		Total	X^2	P
		No.	%	No.	%	No.		
group	cartialge-perichondrium graft	5	25	10	40	15	2.4	>0.05
	fascia graft	6	30	9	36	15		
	alloderm graft	9	45	6	24	15		
	Total	20	100	25	100	45		

Table (4): Comparison among 3 groups according to sex:

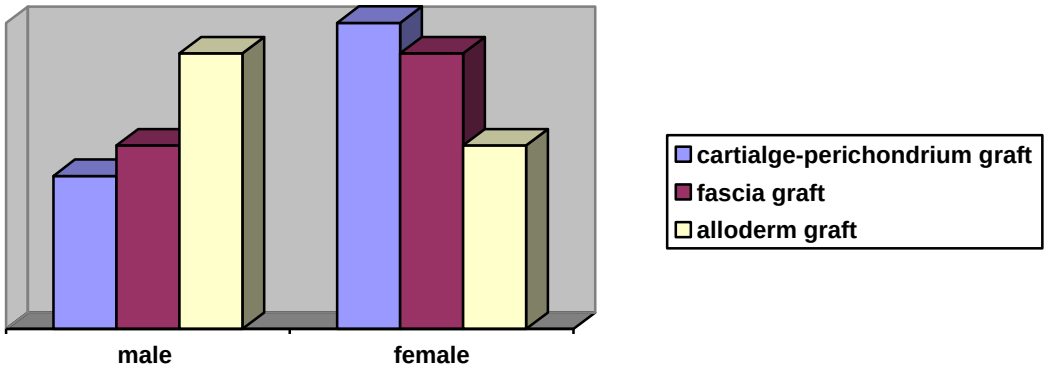

Fig. (8)

The healing of the tympanic membrane was the first parameter to be evaluated after tympanoplasty was done. Table 5 & fig. (9) showed the number of the tympanic membrane perforations healed in each group. In the First group the healed tympanic membrane perforations were 13 (86.7%), in the Second group were 14 (93.3%) and in the Third group were 14 (93.3%). The P value was (>0.05) i.e. insignificant.

		success		**failed**		**Total**	**X^2**	**P**
		No.	**%**	**No.**	**%**	**No.**		
group	cartialge-perichondrium graft	13	86.7	2	13.3	15	0.5	>0.05
	fascia graft	14	93.3	1	6.7	15		
	alloderm graft	14	93.3	1	6.7	15		
	Total	41	100	4	100	45		

Table (5): Comparison among 3 groups according to success rate :

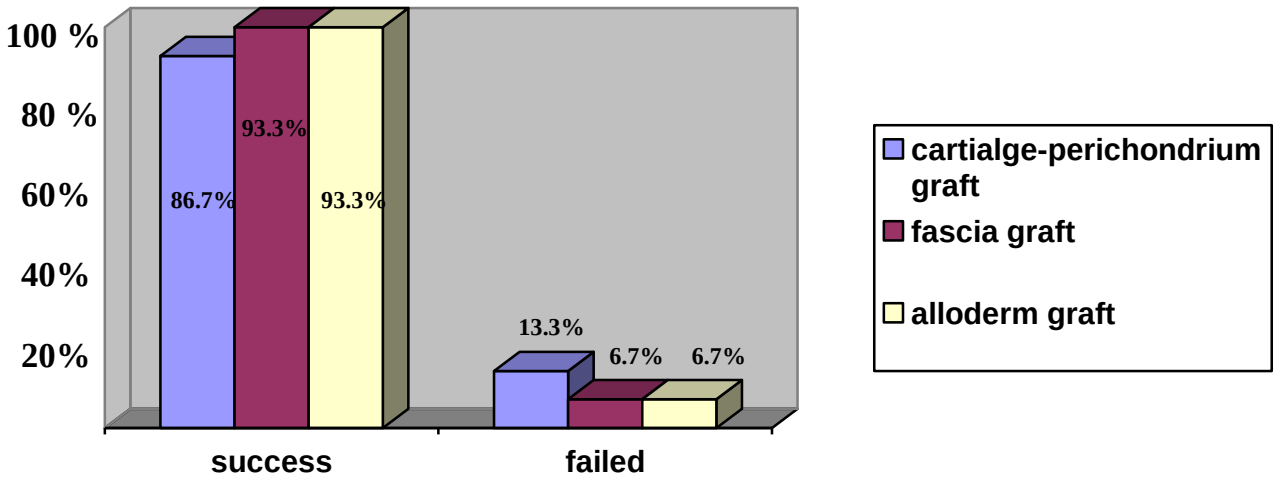
100 %
80 %
60%
40%
20%
86.7%
93.3%
93.3%
13.3%
6.7%
6.7%
success
failed
cartialge-perichondrium graft
fascia graft
alloderm graft

Fig. (9)

Audiogram was done for all the patients in the three groups preoperatively and 1, 3 and 6 months postoperatively to evaluate the air-bone gape in dB in the four main successive frequencies (500-1000-2000-4000) (Table 6-8).

	Pre operative		**Post operative**		**X^2**	**p**
	No.	**%**	**No.**	**%**		
0-10dB	0	0%	11	73.4%	17.4	<0.05
11-20dB	8	53.3%	2	13.3%		
>20dB	7	46.7%	2	13.3%		
Total	15	100%	15	100%		

Table (6):Composite cartialge- perichondrium graft group according to ABG:

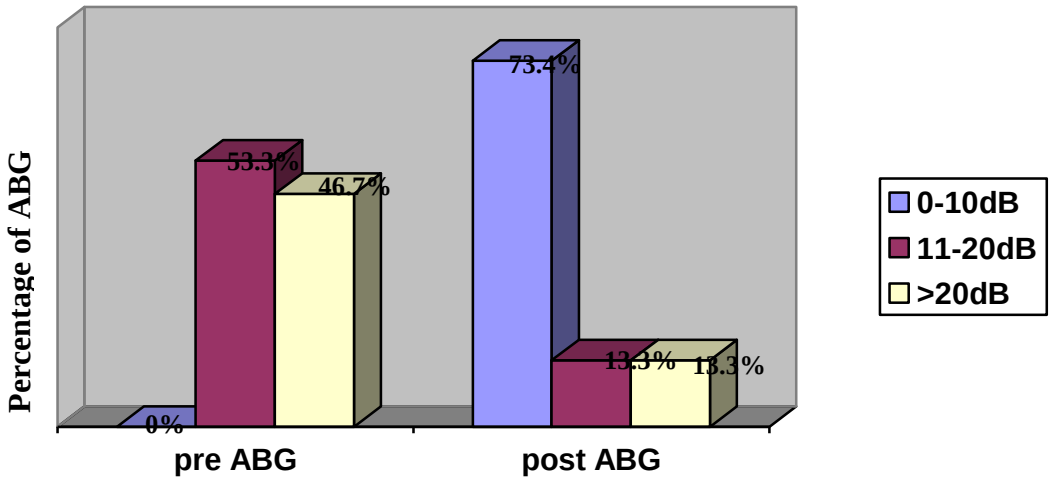
Percentage of ABG
0%
53.3%
46.7%
73.4%
13.3%
13.3%
pre ABG
post ABG
0-10dB
11-20dB
>20dB

Fig. (10)

	Pre operative		Post operative		X^2	p
	No.	%	No.	%		
0-10dB	0	0%	12	80%	20.1	<0.05
11-20dB	8	53.3%	2	13.3%		
>20dB	7	46.7%	1	6.7%		
Total	15	100%	15	100%		

Table (7): Temporalis fascia graft group according to ABG:

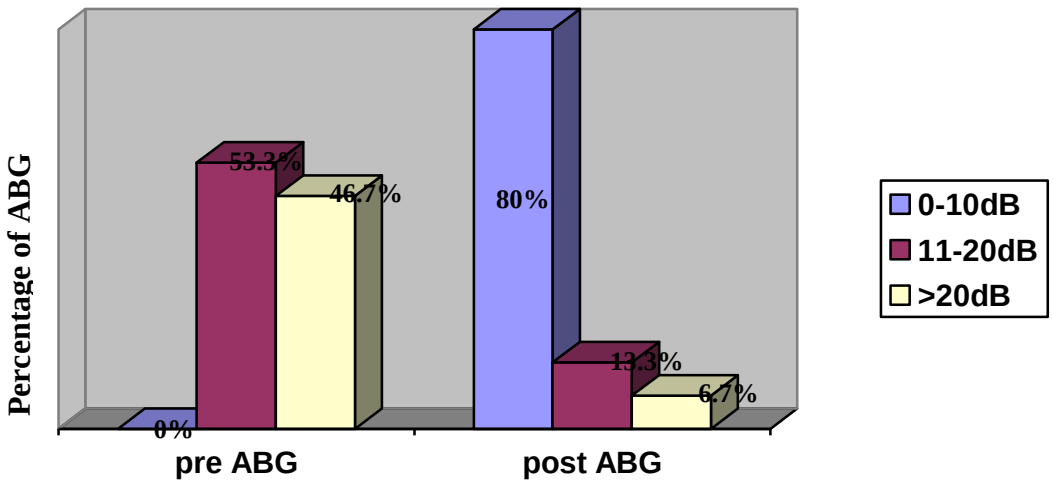

Fig. (11)

	Pre operative		Post operative		X^2	p
	No.	%	No.	%		
0-10dB	0	0%	13	86.6%	22.9	<0.05
11-20dB	9	60%	1	6.7%		
>20dB	6	40%	1	6.7%		
Total	15	100%	15	100%		

Table (8):AlloDerm graft group according to ABG:

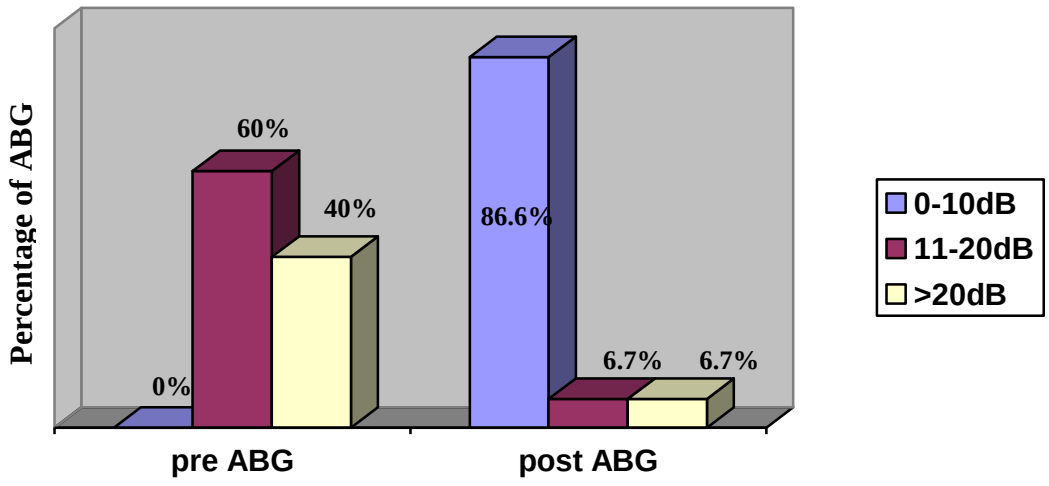

Fig. (12)

As shown in table 9, the mean between the three groups according to preoperative length of A-B gap (Air-Bone gap) for the operated ear in the three groups in dB, was 22 dB in the First group, 22.3 dB in the second group and 21.3dB in the third group. Standard deviation was 4.9 in the first group, 5.3 in the second group and 5.8 in the third group, the mean between the three groups according to postoperative length of A-B gap. The mean in first group was 13.3 in the Second group was 11.3 and in the third group was 11. Standard deviation in first group was 7.5, in the second group was 6.4 and in the third group was 5.7.

		Mean	**N**	**S.D**	**t**	**p**
Cartialge-perichondrium graft	pre ABG	22	15	4.9	8.4	<0.05
	post ABG	13.3	15	7.5		
Fascia graft	pre ABG	22.3	15	5.3	9.9	<0.05
	post ABG	11.3	15	6.4		
AlloDerm graft	pre ABG	21.3	15	5.8	10.02	<0.05
	post ABG	11	15	5.7		

Table (9): Comparison between the results preoperative ABG and postoperative ABG among 3 groups:

p>0.05= not significant
p<0.05= significant
ABG= A-B gap (Air-Bone gap)

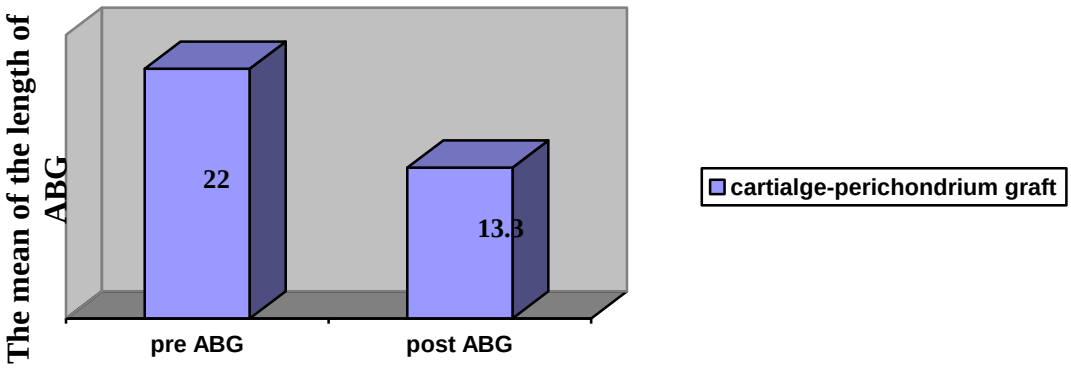

Fig. (13a)

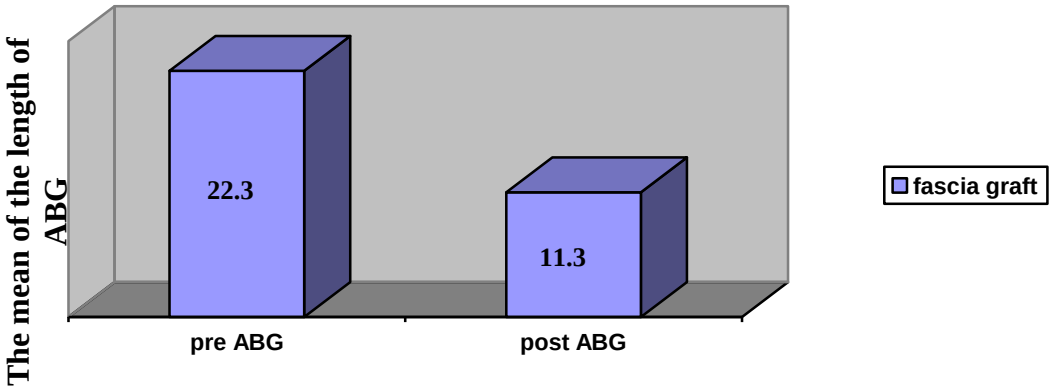

Fig. (13b)

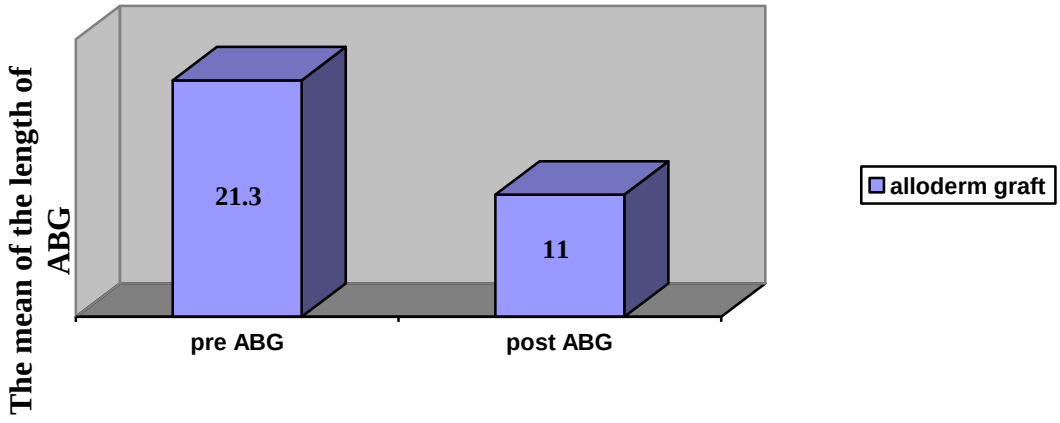

Fig. (13c)

Preoperative audiometry detected mild and moderate hearing loss.

The posteroperative audiogram in most cases showed improvement in hearing.

The relation between the post-operative A-B gap and healing of the graft was found to be statistically significant.

The difference between preoperative A-B gap and postoperative one was found to be statistically significant.